

IN THE CLAIMS

Please amend claims 2, 3, 6, 7, 10, 11, 14, 15, 17, 18, 19, 20, 26, and 28, and cancel claim 23, as follows:

1. (Original) A magnetic head, comprising:
a magnetic yoke;
a write gap layer formed between upper and lower poles of the magnetic yoke;
a write coil having a plurality of coil layers; and
each coil layer extending continuously between the upper and the lower poles through a plane defined by the write gap layer.
2. (Currently Amended) The magnetic head of claim 1, wherein the write coil has an electrical resistance of less than 4 Ohms sufficient to reduce thermal protrusion at an air bearing surface (ABS) of the magnetic head.
3. (Currently Amended) The magnetic head of claim 1, ~~wherein the write coil has an electrical resistance that is less than 0.5 Ohms per coil turn.~~ further comprising:
a first pedestal formed below the upper pole;
a second pedestal formed above the lower pole;
each coil layer further extending between a first height defined between a top of one of the first and the second pedestals and the write gap layer; and
each coil layer further extending between a second height defined between at least half of a height of the other of the first and the second pedestals and the write gap layer.
4. (Original) The magnetic head of claim 1, wherein each coil layer has a height between the upper and the lower poles that is 4 μm or greater.

5. (Original) The magnetic head of claim 1, wherein each coil separating layer is less than 0.4 μm .

6. (Currently Amended) The magnetic head of claim 1, ~~wherein the write coil further comprises a damascene constructed write coil.~~ further comprising:

a first pedestal formed below the upper pole;

a second pedestal formed above the lower pole;

each coil layer further extending between a first height defined between a top of one of the first and the second pedestals and the write gap layer; and

each coil layer further extending between a second height defined between a height of the other of the first and the second pedestals and the write gap layer.

7. (Currently Amended) The magnetic head of claim 1, ~~wherein each coil layer comprises copper and at least one of the upper and lower poles further comprises:~~

~~a pole piece layer over/under which the write coil is positioned; and~~

~~a pedestal formed over/under the pole piece layer at an air bearing surface (ABS).~~

further comprising:

a first pedestal formed below the upper pole;

a second pedestal formed above the lower pole; and

each coil layer further extending continuously to a fullest extent between the upper and the lower poles.

8. (Original) The magnetic head of claim 1, wherein each coil layer comprises copper and at least one of the upper and lower poles further comprises:

a pole piece layer over/under which the write coil is positioned;

a pedestal formed over/under the pole piece layer at an air bearing surface (ABS);

and

the pole piece layer comprising alternating layers of magnetic and non-magnetic dielectric material.

9. (Original) A magnetic recording device, comprising:
at least one rotatable magnetic disk;
a spindle supporting the at least one rotatable magnetic disk;
a disk drive motor for rotating the at least one rotatable magnetic disk;
a magnetic head for writing data from the at least one rotatable magnetic disk;
a slider for supporting the magnetic head;
the magnetic head including:
a magnetic yoke;
a write gap layer formed between upper and lower poles of the magnetic yoke;
a write coil having a plurality of coil layers; and
each coil layer extending continuously between the upper and the lower poles through a plane defined by the write gap layer.

10. (Currently Amended) The magnetic recording device of claim 9, wherein the write coil has an electrical resistance of less than 4 Ohms sufficient to reduce thermal protrusion at an air bearing surface (ABS) of the magnetic head.

11. (Currently Amended) The magnetic recording device of claim 9, ~~wherein the write coil has an electrical resistance that is less than 0.5 Ohms per coil turn.~~ further comprising:

a first pedestal formed below the upper pole;
a second pedestal formed above the lower pole;
each coil layer further extending between a first height defined between a top of one of the first and the second pedestals and the write gap layer; and
each coil layer further extending between a second height defined between at least half of a height of the other of the first and the second pedestals and the write gap layer.

12. (Original) The magnetic recording device of claim 9, wherein each coil layer has a height between the upper and the lower poles that is 4 μm or greater.

13. (Original) The magnetic recording device of claim 9, wherein each coil separating layer is less than 0.4 μm .

14. (Currently Amended) The magnetic recording device of claim 9, ~~wherein the write coil further comprises a damascene-constructed write coil.~~ further comprising:
a first pedestal formed below the upper pole;
a second pedestal formed above the lower pole;
each coil layer further extending between a first height defined between a top of one of the first and the second pedestals and the write gap layer; and
each coil layer further extending between a second height defined between a height of the other of the first and the second pedestals and the write gap layer.

15. (Currently Amended) The magnetic recording device of claim 9, ~~wherein at least one of the upper and lower poles further comprises:~~
~~a pole piece layer over/under which the write coil is positioned; and~~
~~a pedestal formed over/under the pole piece layer at an air bearing surface (ABS).~~ further comprising:
a first pedestal formed below the upper pole; .
a second pedestal formed above the lower pole;
each coil layer further extending continuously to a fullest extent between the upper and the lower poles.

16. (Original) The magnetic recording device of claim 9, wherein at least one of the upper and lower poles further comprises:
a pole piece layer over/under which the write coil is positioned;

a pedestal formed over/under the pole piece layer at an air bearing surface (ABS);
and
the pole piece layer comprising alternating layers of magnetic and non-magnetic dielectric material.

17. (Currently Amended) A magnetic head, comprising:
a magnetic yoke;
a write gap layer formed between upper and lower poles of the magnetic yoke;
a write coil having a plurality of coil layers; ~~and~~
each coil layer extending continuously between the write gap layer and one of the lower pole and the upper pole of the magnetic yoke; and
the write coil having an electrical resistance of 4 Ohms or less.

18. (Currently Amended) The magnetic head of claim 17, ~~wherein no write coil portion is located between the write gap layer and the other one of the lower pole and the upper pole.~~ further comprising:
each coil layer extending continuously between the write gap layer and the lower pole of the magnetic yoke.

19. (Currently Amended) The magnetic head of claim 17, wherein the ~~write coil has an~~ electrical resistance is sufficient to reduce thermal protrusion at an air bearing surface (ABS) of the magnetic head.

20. (Currently Amended) The magnetic head of claim 17, wherein the ~~write coil has an~~ electrical resistance ~~that~~ is less than 0.5 Ohms per coil turn.

21. (Original) The magnetic head of claim 17, wherein each coil layer has a height between the upper and the lower poles that is 4 μm or greater.

22. (Original) The magnetic head of claim 17, wherein each coil separating layer is less than 0.4 μm .

23. (Canceled)

24. (Original) The magnetic head of claim 17, wherein the one of the lower pole and the upper pole further comprises:

- a pole piece layer under which the write coil is positioned; and
- a pedestal formed under the pole piece layer at an air bearing surface (ABS).

25. (Original) The magnetic head of claim 17, wherein at least one of the upper and lower poles further comprises:

- a pole piece layer over/under which the write coil is positioned; and
- the pole piece layer comprising alternating layers of magnetic and non-magnetic dielectric material.

26. (Currently Amended) A magnetic recording device, comprising:

- at least one rotatable magnetic disk;

- a spindle supporting the at least one rotatable magnetic disk;

- a disk drive motor for rotating the at least one rotatable magnetic disk;

- a magnetic head for writing data from the at least one rotatable magnetic disk;

- a slider for supporting the magnetic head;

- the magnetic head including:

- a magnetic yoke;

- a write gap layer formed between upper and lower poles of the magnetic yoke;

- a write coil having a plurality of coil layers; ~~and~~

- each coil layer extending continuously between the write gap layer and one of the lower pole and the upper pole of the magnetic yoke; and

the write coil having an electrical resistance of 4 Ohms or less.

27. (Original) The magnetic recording device of claim 26, wherein the write coil has an electrical resistance sufficient to reduce thermal protrusion at an air bearing surface (ABS) of the magnetic head.

28. (Currently Amended) The magnetic recording device of claim 26, ~~wherein the write coil has an electrical resistance of 4 Ohms or less.~~ further comprising:
each coil layer further extending continuously to a fullest extent between the upper and the lower poles.

29. (Currently Amended) The magnetic recording device of claim 26, wherein the ~~write coil has an~~ electrical resistance ~~that~~ is less than 0.5 Ohms per coil turn.

30. (Original) The magnetic recording device of claim 26, wherein each coil separating layer is less than 0.4 μm .